

ORAL PRESENTATION

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Can an initial end-tidal CO₂ <1.33 kPa predict lack of return of spontaneous circulation during pre-hospital cardiac arrest?

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Background

Previous results have indicated that an initial end-tidal (ET) CO₂ < 1.33 may be used as a cut-off value for when return of spontaneous circulation (ROSC) can be achieved during pre-hospital cardiac arrest [1].

We aimed at validating these results in our anaesthetist-staffed pre-hospital critical care system.

Materials and methods

We prospectively registered data [2] according to the Utstein-style template for reporting data from pre-hospital advanced airway management [3] from February 1st 2011 to October 31st 2012. Included were consecutive patients at all ages with pre-hospital cardiac arrest treated by eight anaesthetist-staffed pre-hospital critical care teams in the Central Denmark Region.

Results

We registered data from 595 cardiac arrest patients; in 58.9 % (n=350) of these cases the pre-hospital critical care teams performed pre-hospital endotracheal intubation.

An initial end-tidal CO₂ measurement following pre-hospital endotracheal intubation were available in 270 cases.

We identified 22 patients, who had an initial ET-CO₂ below 1.33 kPa.

Four of these patients achieved return of spontaneous circulation. All four patients were admitted to hospital, three with stable circulation and one with ongoing automated CPR due to recurrent cardiac arrest.

Conclusion

Our results indicates that an initial ET-CO₂ below 1.33 kPa during pre-hospital cardiac arrest should not be used as a cut-off value for the achievability of return of spontaneous circulation.

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